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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,631	11/18/2003	Jin-Seung Sohn	Q78520	3244

23373 7590 03/21/2007
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EXAMINER

MILLER, BRIAN E

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/714,631

Applicant(s)

SOHN ET AL.

Examiner

Brian E. Miller

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 155-176 is/are pending in the application.
- 4a) Of the above claim(s) 159, 160 and 175 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 155-158, 161-174 and 176 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 155-176 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2627

Claims 155-176 are pending, with claims 159-160, 175 remaining withdrawn due to a previously set forth restriction requirement.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/22/06 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 155, 158, 161-165, 169-172, 176 are rejected under 35 U.S.C. 102(b) as being anticipated by Hellerich (US 3,854,347). (As per claim 155) Hellerich discloses (see FIGs. 2-5) a self-compensating dynamic balancer apparatus for a disk player which records and reproduces information from a disk installed on the disk player; the apparatus comprising: a self-compensating dynamic balancer 50 locatable co-axial with the rotation axis about which a disk is rotated by rotational components of the disk player and rotates in use with at least one of the rotational components; a mobile unit 52 arranged to be freely movable within a non-magnetic

Art Unit: 2627

hollow tube (see col. 3, line 58-col 4, line 6) by centrifugal force generated by rotation of the disk such that the center of gravity of the self-compensating dynamic balancer moves to be located opposite to the center of gravity of the disk with respect to the rotation axis (which is basic balancing theory well known in the art-see also col. 1, line 63-col. 2, line 10); wherein the mobile unit includes at least one rigid body 52; (as per claim 158) wherein the tube is formed of a body having a race in which the mobile unit is disposed and a cover member which covers the race by coupling to the body, i.e., the body and cover are integrally formed in Hellerich; (as per claim 161) wherein the rigid body is formed into a shape of a spherical body which can roll inside the race (col. 3, line 60); (as per claims 162, 163, 165) wherein the rigid body is formed of a non-magnetic material, e.g., stainless steel (one of SUS300, SUS304, SUS316), in order to avoid being influenced by a magnetic force (see col. 3, line 66); (as per claim 164) wherein the substance, e.g., stainless steel, does not corrode; (as per claim 169) wherein the cross section of the tube enclosing the mobile unit has a shape of rectangular or oval (see FIG. 5 and col. 4, line 48); (as per claims 170, 171 & 172) wherein the tube enclosing the mobile unit is synthetic resin, e.g., plastic (see col. 3, last line), which does not corrode; (as per claim 176) wherein the self-compensating dynamic balancer is formed integrally with the turntable 12 (see FIG. 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2627

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 156, 157, 168 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hellerich in view of Taylor et al (WO 93/23687). For a description of Hellerich, see the rejection, supra. Hellerich is silent as to having a fluid within the hollow tube.

Taylor et al, within the rotational balancing art, discloses a self-compensating dynamic balancer that includes a hollow tube 11, spherical balls 21 and fluid 107 (see FIGs 11&12 and page 16, line 15 thru page 18, line 9). From this teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the self-compensating dynamic balancer of Hellerich with a fluid, as taught by Taylor et al. The motivation would have been: providing a fluid into the hollow tube with the balls, would have enabled the balls to move within the groove at a slower rotational speed, thereby providing a smoother balancing apparatus. Furthermore, the fluid would also provide an inherent dampening effect to the noise of the rotating balls within the hollow tube as well as providing a reduction in friction, as would have been readily apparent to a skilled artisan.

7. Claims 166-167, 173-174 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hellerich. For a description of Hellerich, see the rejection, supra. With respect to the above claims, Hellerich is expressly silent as to coating the rigid body and/or the hollow tube with an anti-oxidation coating, however, it would have been considered obvious to a skilled artisan to have provided such coating, especially if the components, i.e., tube, balls, were originally formed

Art Unit: 2627

from a corrosive material. As would have been readily apparent, providing such a coating would have prevented corrosion to these components, providing longevity thereof. If provided over the materials as disclosed by Hellerich, such a coating would provide inherent lubrication characteristics, as would have been readily apparent by a skilled artisan.

Response to Arguments

8. Applicant's arguments filed 11/22/06 have been fully considered but they are not persuasive.

A...Applicants' assert that Hellerich fails to teach an aspect of the claim, which is described as the last clause of the claim:

"... wherein said mobile unit is arranged to be freely movable within said non-magnetic hollow tube by centrifugal force generated by rotation of said disk such that the center of gravity of said self-compensating dynamic balancer moves to be located opposite to the center of gravity of said disk with respect to said rotation axis."

And further states, "In other words, Hellerich does not teach how the disc pack assembly 10 is balanced beyond simply attaching to the assembly 10 the balancing ring or tube 50 having the mass members 52. Specifically, Hellerich fails to disclose how the mass members 52 are arranged within the tube 50.

In response, the Examiner respectfully disagrees that Hellerich does not teach this limitation.

The structural limitation needed to meet the claimed function is "said mobile unit arranged to be freely movable within said non-magnetic hollow tube..." which is clearly met by Hellerich. The Examiner maintains that the claimed function (as cited above) is an inherent result of the freely movable bodies within the hollow member when coaxially mounted with the spindle shaft, as

Art Unit: 2627

clearly taught by Hellerich. It is noted that the cited passage the Examiner relied upon is col. 1, line 63 to col. 2, line 2, not col. 3, line 58 to col. 4, line 6, as set forth by the applicant.

The claims do not set forth any additional structure that would somehow operate any differently than the balancing apparatus as disclosed by Hellerich.

B...As no specific arguments have been set forth regarding the rejected claims 156-158, 161-174, 176, the Examiner maintains that they are also anticipated/obvious over Hellerich, as set forth, supra.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP Patent document to Araki (62024052) is considered to discuss the conventional balancing operation with freely movable objects within a circular chamber including centrifugal force acting on the balls and shifting the center of gravity, as well known in the art.

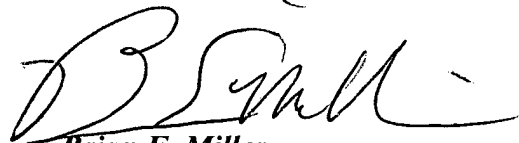
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (571) 272-7578. The examiner can normally be reached on M-TH 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Brian E. Miller
Primary Examiner
Art Unit 2627

BEM
March 14, 2007